



## Homework 2 Boolean Expressions

1. Simplify the following Boolean expressions.

(a)  $A \wedge (B \vee 1)$  [1]

(b)  $\neg (\neg A \wedge \neg B)$  [1]

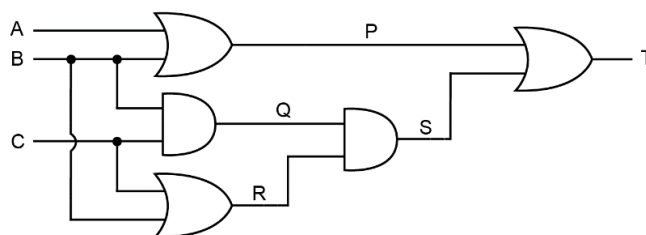
(c)  $(A \wedge A \wedge B) \vee (A \wedge B \wedge B)$  [1]

2. Simplify the following Boolean expressions, explaining each step.

(a)  $A \wedge \neg B \vee A \wedge \neg (B \vee C)$  [3]

(b)  $A \wedge B \vee A \wedge (B \vee C) \vee B \wedge (B \vee C)$  [4]

3. Write expressions for P, Q, R and S and T represented in the following logic circuit. Do not simplify the expressions. [5]



[Total 15 marks]